

Dr. Sushil Kumar Ghosh
Associate Professor in Mathematics
Department of Mathematics, Garhbeta College

Date of Birth: 15.01.1968

Qualifications: 1) M. Sc. in Applied Mathematics (IIT, Kharagpur) 1993
2) Ph. D. in Bio-Fluid Mechanics (IIT, Kharagpur) 1999

Qualifying National Exams. : i) GATE ii) NET (CSIR)

Teaching Experience:

Under-graduate Level: College/Univ./Institute/No. of Years/Pass/Hons.:

- (i) Sikkim Manipal Institute of Technology, 2 years : Engineering Mathematics
(ii) Garhbeta College 21 years : General & Hons. Both

Post-graduate Level: Name of the Univ./Institute

(i) Vidyasagar University--- **Topic Taught:** Eigen Value Problem, Continuum Mechanics, Integral Transform, Fluid Mechanics, MHD

(ii) Netaji Subhas Open University--- **Topic Taught:** Continuum Mechanics, Differential Equations, Fluid Mechanics.

Research Field: Fluid Dynamics, Heat Transfer, Two Phase Flow, Bio-Mechanics, Bio-Magnetic Fluid Dynamics.

Minor Research projects carried out/ongoing funded by UGC as a Principal Investigator :

Title of the Project	Funding Agency	Period	Completed/ongoing	Amount
(i) Mathematical Modelling of Poroelastic Channel Flow <i>(Principal Investigator)</i>	UGC	2001--2003	Completed	Rs. 50,000.00
ii) Hydro-Magnetic Flow of a non-Newtonian Fluid Through a Channel <i>(Principal Investigator)</i>	UGC	2005--2007	Completed	Rs. 80,000.00
(iii) Interaction of Magnetic Field with Blood Flow in Arteries <i>(Principal Investigator)</i>	UGC	2009--2010	Completed	Rs. 86,500.00
(iv) Heat and Mass transfer of a Visco-elastic Fluid passing over a plate in the presence of traverse Magnetic field -----A Numerical Investigation <i>(Principal Investigator)</i>	UGC	2012--2013	Completed	Rs.1,94,000.00

v) Computational Modeling for the flow of Magnetic Nano-Particles along with the blood and Electromagnetically Induced Heat Transfer ---- An Application to Destruction of Cancer Cells <i>(Principal Investigator)</i>	UGC	2017--2019	Completed 2019	Rs. 3,00,000.00
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List of Publications of Dr. Sushil Kumar Ghosh

1. "A mathematical model for the study of blood flow through a channel with permeable walls", *Acta Mechanica* (An International Journal), Vol. 122, No.1—4, 137---153, 1997
2. "Flow of a non- Newtonian fluid through a channel with a porous pulsating walls Application to hemodialysis/ultrafiltration in artificial kidney" *Modeling, Measurement and Control (AMSE)*, (An International Journal), Vol. 57, 47---63, 1998
3. "Pulsatile flow of a couple stress fluid through a narrow porous tube of elliptic cross Section: A model for blood flow in a stenosed arteriole", *Engineering Simulation*, (An International Journal), Vol. 15, 849---864, 1998
4. "Flow of a Casson fluid in a narrow tube with a side branch", *International Journal of Engineering Science* (An International Journal),, Vol. 38, 2045-2077, 2000
5. "A mathematical model for the study of interstitial fluid movement vis-à-vis the non-Newtonian behaviour of blood in a constricted artery", *Computers and Mathematics with Applications* (An International Journal),, Vol 41, 783--811, 2001
6. "Pulsatile flow of blood through a porous elastic vessel of variable cross-section", *Computers and Mathematics with Applications* (An International Journal),, Vol. 43, 903--916, 2003
7. "Hydro-magnetic Fluctuating Flow of a Visco-elastic Fluid in a porous Channel", *J. Appl. Mech. (ASME)*, (An International Journal),, Vol. 129, No.2, 177—180, 2007
8. "An Exact Solution of a Hydro-magnetic Flow of a non-Newtonian Fluid through Channel with a oscillating wall", Published in Review *Bulletin of the Calcutta Mathematical Society* 16(2) 145-154, 2008

9. “Micropolar Fluid Through a Channel--A Mathematical Model for Lung alveolar Sheet” *Journal of Physical Sciences*, Vol. 15, 43— 57, 2011
10. “Mixed convection MHD flow of viscoelastic fluid in a porous medium past a hot vertical plate” *World Journal of Mechanics* (An International Journal), Vol. 2, 262—271, 2012
11. ‘An Exact Solution of Fluctuating Hydromagnetic Flow of a Dusty Fluid Between Parallel Plates’ *Annals of Pure and Applied Mathematics* (An International Journal),, Vol. 4, 120-126, 2013
12. “Unsteady Hydro-magnetic Flow of an Oldroyd Fluid Through a Porous Channel with Oscillating Walls’, *Journal of Physical Sciences*, Vol. 17, 155-167, 2013
13. “Unsteady Hydro-magnetic Flow of a Viscous Fluid Passing over an oscillating Flat Plate’, *International Journal of Applied Mathematics and Mechanics*, Vol. 3, 1-8, 2014
14. “Heat Transfer in Hydro-magnetic fluid Flow: Study of Temperature Dependence of Fluid Viscosity”, *Journal of Applied Fluid Mechanics* (An International Journal), Vol. 7, 4, 633—640, 2014
15. “Convective heat transfer and MHD viscoelastic nanofluid flow induced by a stretching sheet” ‘*International Journal of Applied and Computational Mathematics*’ DOI 10.1007/s40819-015-0080-4 , 2015
16. “MHD Rotating Flow and Heat Transfer through a Channel with Hall effects” *Journal of Magnetism and Magnetic Materials* 10.1016/j.jmmm.2015.12.033, 2016
17. “Effects of Joule Heating and Viscous Dissipation on MHD Visco-elastic Fluid Flow Past a Stretching Surface with Source/Sink”, *International Journal of Mathematics and Computations*, Vol. 27, No. 3, 2016 .
18. “Flow of a non-Newtonian Heated Fluid in a tube with a side branch” *International Journal of Applied and Computational Mathematics*, DOI 10.1007/s40819-016-0210-7, 2016
19. ” Unsteady Magnetized Flow and Heat Transfer of a Viscoelastic fluid over a Stretching Surface”, *Journal of Magnetism and Magnetic Materials* , 443, 309—318, 2017